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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,506	11/07/2003	Christos Tsironis		8537

7590 12/21/2004  
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CANADA

EXAMINER

NGUYEN, VINCENT Q

ART UNIT PAPER NUMBER

2858

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/702,506

Applicant(s)

TSIRONIS, CHRISTOS

Examiner

Vincent Q Nguyen

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/7/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. Please submit the documents listed under Non-Patent Literature Documents in the IDS filed 11/07/2003 for them to be considered by the examiner.

### ***Specification***

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it contains the legal phraseology "comprises" (e.g. line 2). Correction is required. See MPEP § 608.01(b).

***Drawings***

4. Figure 8 should be designated by a legend such as --Prior Art-- (See specification page 6, line 3 of the last paragraph) because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Objection***

5. Claim 1 recites a tuner comprising a test port, airline, two sliding carriages carrying a metal-dielectric combination probe each and means for remote control probes. The claimed elements are not related to one to another. The claimed probe, for example, is not related to the test port or to the airline.

Because the claimed elements are not related with the claimed tuner, for the purpose of examination, examiner will treat the claimed elements as separated elements (i.e. any probe in any tuner device).

Claim 1 recites the limitation "probes" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 2, line 1, before "combination", either "the" or "said" should be removed.

Claim 3 recites the limitation "a set of metal-dielectric probes" in line 1. There is insufficient antecedent basis for this limitation in the claim.

For the purpose of examination, examiner assumes that the claim is intended to further limits the probe mentioned in claim 1.

Regarding claim 4, line 3, the phrase "such as" renders limitations in lines 4-6 uncertain. For the purpose of examination, examiner assumes that limitations in lines 4-6 is for the purpose of illustration only and will not give patentable weight.

Claims 5-6 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

In case Applicant amend the claims to independent form, the claims will be withdrawn from further consideration because the invention are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the method of calibration as claimed can be performed using a vector network analysis (VNA).

For the purpose of examination, examiner assumes that the claims 5-6 are intended to recite the method of using the claimed apparatus of claim 1.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 3, the claim recites the limitation "where the external diameter of the dielectric core of the probe varies between the two extreme, the zero (pure metallic probe) and the width of the slot of the airline (pure dielectric probe)".

How come the diameter of the probe can be varied from zero to the width of the slot? As far as the examiner knows, the size of nothing can be varied from zero to a value.

Does Applicant mean the dielectric of the probe varies from pure metal to pure dielectric? Even if it is the case, examiner is not understood because metal has dielectric. Examiner is not sure whether the pure dielectric is the relative permittivity of free space? How come a material can be varied from metal to free space?

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 2, 5-6, are rejected under 35 U.S.C. 102(e) as being anticipated by Kiyokawa et al. (6,515,465).

Regarding claim 1, Kiyokawa et al. discloses a microwave load pull tuner comprising (Figures 14a and 14b) a test port and an idle port (Any microwave coupler has test port and an idle port; see figure 1), a horizontal transmission airline in form of a slotted coaxial (Figure 14b), two sliding carriages (105b) (Figure 14a) carrying a metal-dielectric combination probe each (Any material has dielectric including the probe of Kiyokawa et al.) and means (107) for remote horizontal position control of the said combination probe.

Regarding claim 2, Kiyokawa et al. discloses (figure 2) the probe (50) made of a cylindrical horizontal dielectric insert (At element 53), which slides on the central conductor (41b) of the slotted airline (figure 4), which said insert is embedded inside a metallic square slug (See figures 2 or 4), which said slug slides inside and along the ground walls of the slotted airline (41a) (figure 4), parallel to the central conductor (41b).

Regarding claims claim 5-6, pertinence to the discussion of the objection above, the claims 5-6 are rejected as being applied to claim 1.

10. Claims 1, 5, 6, are rejected under 35 U.S.C. 102(b) as being anticipated by Wolf (2,692,971).

Regarding claim 1, Wolf discloses a microwave load pull tuner comprising a test port and an idle port (Any microwave coupler has test port and an idle port including the one shown in figure of Wolf for microwave signal coupling), a horizontal transmission airline in form of a slotted coaxial (16), two sliding carriages (13, 14) (The device is sliding (Column 2, lines 50-55) elements 13-14 are sliding carriage) carrying a metal-dielectric combination probe each and means (M) for remote horizontal position control of the said combination probe (Column 3, lines 33-43).

Regarding claims claim 5-6, pertinence to the discussion of the objection above, the claims 5-6 are rejected as being applied to claim 1.

11. Claims 1, 5, 6, are rejected under 35 U.S.C. 102(b) as being anticipated by Cusack et al. (The article "Automatic Load Contour Mapping" submitted in the IDS filed 11/07/2003).

Regarding claim 1, Cusack et al. Cusack et al. discloses a microwave load pull tuner comprising a test port and an idle port (Any microwave coupler has test port and an idle port including the one shown in figure 5 of Cusack et al. for microwave signal coupling), a horizontal transmission airline in form of a slotted coaxial (Figure 1), two



Art Unit: 2858

sliding carriages (slugs) carrying a metal-dielectric combination probe each and means (Slide Wire Power Supply) for remote horizontal position control of the said combination probe.

Regarding claims claim 5-6, pertinence to the discussion of the objection above, the claims 5-6 are rejected as being applied to claim 1.

12. Claims 1, 5, 6, are rejected under 35 U.S.C. 102(b) as being anticipated by Tsironis (6,297,649).

Regarding claim 1, Tsironis discloses a microwave load pull tuner comprising a test port and an idle port (Any microwave coupler has test port and an idle port including the one shown in figure 4), a horizontal transmission airline in form of a slotted coaxial (Figure 8), two sliding carriages (1, 2) carrying a metal-dielectric combination probe each and means for remote horizontal position control of the said combination probes (Column 4, lines 60-63).

Regarding claims claim 5-6, pertinence to the discussion of the objection above, the claims 5-6 are rejected as being applied to claim 1.

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over kiyokawa et al. (6,515,465).

Regarding claim Kiyokawa et al. does not disclose electro-mechanical tuners with several diameters.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the probe of Kiyokawa et al. with different diameters to use in different size of conductors is routine in the art since changing the size of diameter of probe to use in different conductor sizes does not change its function.


#### ***Contact Information***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571) 272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2858

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



December 17, 2004

Vincent Q. Nguyen  
Primary Examiner  
Art Unit 2858